February 17, 2012

Ms. Shelly Lam, LPG
Federal On-Scene Coordinator
Emergency Response Branch
U.S. Environmental Protection Agency, Region 5
2525 N. Shadeland Avenue
Indianapolis, IN 46219

Subject: **Site Assessment Report**
Kokomo Dump Site
Kokomo, Howard County, Indiana
Technical Direction Document No. TO-01-11-08-0018
OTIE Contract No. EP-S5-10-10

Dear Ms. Lam:

OTIE is submitting the enclosed Site Assessment Report for the Kokomo Dump Site in Kokomo, Indiana. If you have any questions or comments about the report or need additional copies, please contact me at (312) 220-7000 or Raghu Nagam at (312) 220-7005.

Sincerely,

Naren Babu
Project Manager

Enclosure

cc: Raghu Nagam, START Program Manager

SITE ASSESSMENT REPORT
KOKOMO DUMP SITE
KOKOMO, HOWARD COUNTY, INDIANA

Prepared for:

U.S. Environmental Protection Agency
Emergency Response Branch, Region 5
77 West Jackson Boulevard
Chicago, IL 60604

TDD No.:	TO-01-11-08-0018
Date Prepared:	February 17, 2012
Contract No.:	EP-S5-10-10
Prepared by:	OTIE
START Project Manager:	Naren Babu
Telephone No.:	(312) 220-7000
U.S. EPA On-Scene Coordinator:	Shelly Lam
Telephone No.:	(317) 308-3073

100 W Monroe Street, Suite 300
Chicago, IL 60603

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APPENDICES

1. INTRODUCTION

OTIE has prepared this Site Assessment Report in accordance with the requirements of U.S. Environmental Protection Agency (U.S. EPA) Technical Direction Document (TDD) No. TO-01-11-08-0018 under the Superfund Technical Assessment and Response Team (START) contract No. EP-S5-10-10. The scope of this TDD was to conduct a Site Assessment at the Kokomo Dump Site (Site) in Kokomo, Howard County, Indiana. START was tasked to prepare a site-specific Health and Safety Plan, field sampling and analysis plan, subcontract an analytical laboratory, conduct surface and subsurface soil contamination investigation with drilling subcontractor, collect surface and subsurface soil samples, evaluate analytical data, document on-Site conditions with written logbook notes and still photographs, and prepare this Site Assessment Report. Naren Babu, the START Project Manager, conducted field sampling on August 19, 2011.

This Site Assessment Report summarizes the Site background; discusses the assessment activities; provides a summary of the analytical data; and discusses potential site-related threats. The Appendix for this report includes a photographic log of the Site (Appendix A), the soil boring logs (Appendix B) and the validated sample analytical results (Appendix C).

2. SITE BACKGROUND

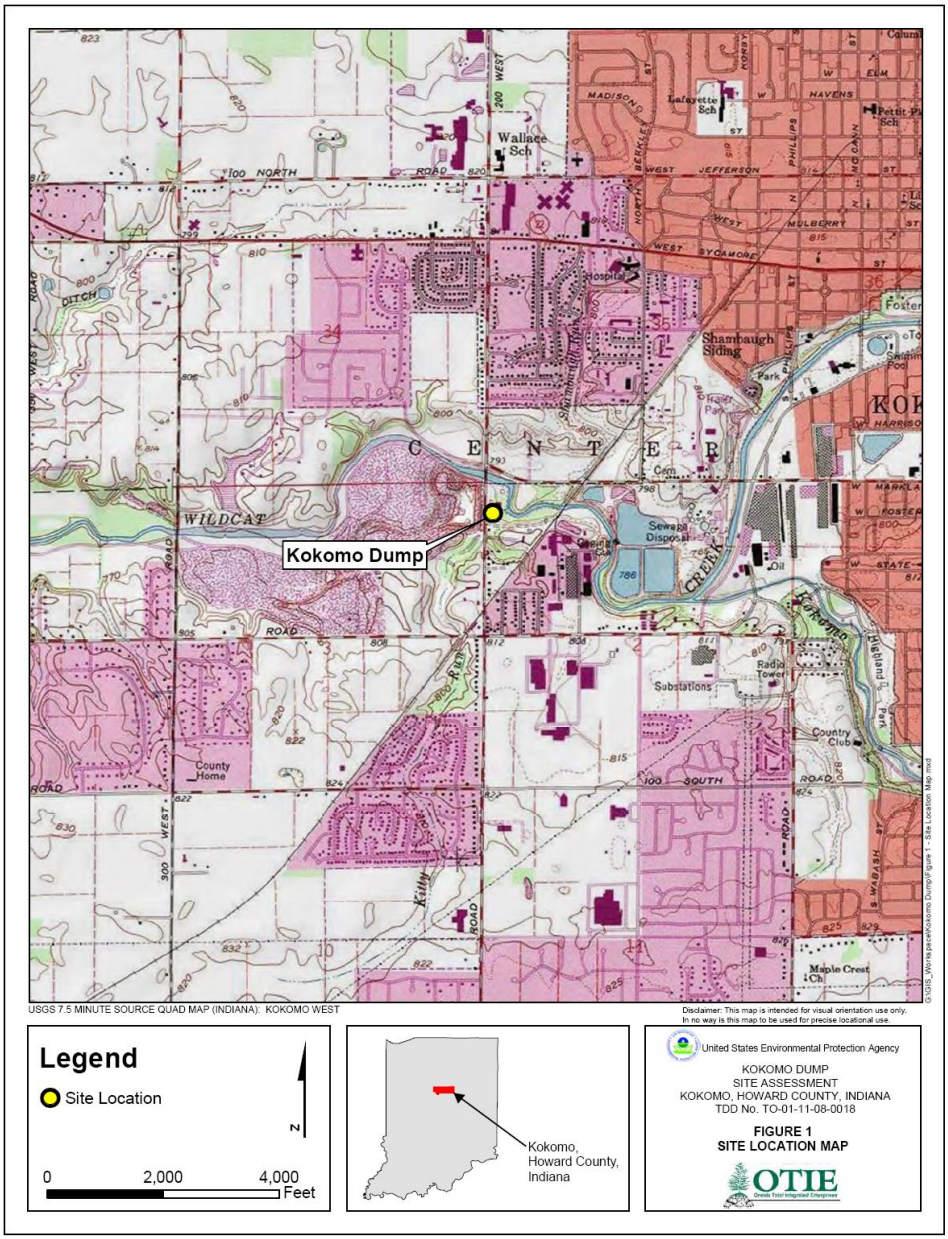
This section provides Site background information and the history of the Site.

2.1 Site Description

The Kokomo Dump Site (Site) was a municipal landfill located at 1130 S. Dixon Rd., Kokomo, Indiana. The Site occupies approximately 4.54 acres and is owned by the City of Kokomo.The geographical coordinates for the building are 40.473513 degrees north latitude and 86.164533 degrees west longitude (Figure 1 – Site Location Map). The area surrounding the Site is a mix of residential and industrial properties. The Site is surrounded by Dixon Road to the west, commercial properties on the north, residential properties to the south, and a railroad on the east. The Wildcat Creek is approximately 500 feet (0.1-miles) from the Site on the north side and flows west towards Wabash River near Lafayette, IN.

2.2 Site History

The Site was a municipal landfill operated by the City of Kokomo and used for depositing municipal wastes. The Indiana Department of Environmental Management (IDEM) and U.S. EPA conducted a Site reconnaissance in April 2011 and observed numerous drums at or near the ground surface. IDEM collected samples from three drums and screened them using an x-ray fluorescence (XRF)-field screening instrument. Results were as high as 41,765 milligrams per kilogram (mg/Kg) lead, 1,600 mg/kg chromium, 3,370 mg/Kg arsenic, 13,652 mg/Kg zinc and 30 mg/Kg mercury. Based on these results, U.S. EPA tasked OTIE, the Superfund Technical Assessment and Response Team (START) contractor, to subcontract a Geoprobe drill rig and install soil borings, and to conduct surface and subsurface soil contamination investigation.


Kokomo Dump
WILDCAT
CENTER
Wallace Sch
Lafayette Sch
Shambaugh Siding
Sewage Disposal
Substations
Radio Tower
Country Club
County Home
Maple Crest Ch
Hospital
Park
Cem
Oil
MADISON
JEFFERSON
MULBERRY
SYCAMORE
HAVENS
ELM
100 NORTH
100 SOUTH
ROAD
DITCH
CREEK
USGS 7.5 MINUTE SOURCE QUAD MAP (INDIANA): KOKOMO WEST
Disclaimer: This map is intended for visual orientation use only.
In no way is this map to be used for precise locational use.
Legend
Site Location
N
0
2,000
4,000
Feet
Kokomo,
Howard County,
Indiana
United States Environmental Protection Agency
KOKOMO DUMP
SITE ASSESSMENT
KOKOMO, HOWARD COUNTY, INDIANA
TDD No. TO-01-11-08-0018
FIGURE 1
SITE LOCATION MAP
OTIE
Oneida Total Integrated Enterprises

3. SITE ASSESSMENT ACTIVITIES

Site Assessment (SA) activities at the Kokomo Dump Site, including Site reconnaissance and sampling activities, are discussed below. U.S. EPA and START performed the Site assessment, which included conducting surface and subsurface soil contamination investigation with drilling subcontractor, Ark Engineering Services Inc., and the collection of surface and subsurface soil samples.

A site-specific Sampling and Analysis Plan (SAP) was developed for the SA prior to fieldwork. The SAP described the data quality objectives (DQO), sampling strategy, sampling locations, sampling methodology, and analytical procedures used during the SA.

This section summarizes field investigation activities including Site reconnaissance (subsection 3.1) and sampling activities (subsection 3.2). Table 1 presents a summary of all samples collected and their associated locations. Table 2 presents a summary of the field screening results. Photographic documentation is provided in Appendix A.

3.1 Site Reconnaissance

On August 19, 2011, U.S. EPA On-Scene Coordinator (OSC), Shelly Lam, and OTIE START member Naren Babu mobilized to the Site and met with the drilling subcontractor, Ark Engineering services and the city and county officials. A Health and Safety meeting was conducted prior to the Site reconnaissance to discuss about the Site related threats, required PPE and the route to the hospital.

Prior to conducting the Site reconnaissance, START calibrated air monitoring equipment-RAE System MultiRAE® Plus five-gas monitor. MultiRAE includes a photoionization detector that measures organic vapors, a carbon monoxide (CO) sensor, a hydrogen sulfide (H_2S) sensor, a lower explosive limit (LEL) sensor, and an oxygen (O_2) sensor.

The Site reconnaissance activities were conducted in Level "D" personal protective equipment (PPE) gear in accordance with the approved site-specific Health and Safety Plan (HASP). Air monitoring was conducted in the breathing zone throughout the Site reconnaissance using the MultiRAE® plus five-gas monitor. MultiRAE did not detect any organic vapor readings above the background level during the Site reconnaissance.

The Site reconnaissance activities began inside the fenced area near the Site building and proceeded to the southeast along the property line inside the "L" shaped fence (Figure 2- Sampling Location Map). The reconnaissance proceeded along the perimeter to the southeast, and then along the railroad behind the fence and to the Wildcat Creek on the north side. The Site is accessible for public from the eastside of the property where it is not fenced. A storm outlet and a swale were observed close to the southeast edge of the property. Several partially buried drums were located on the banks of the swale and appeared to be in deteriorated condition (Photo #1 in Appendix A). One of the drums with no lid and ruptured sides had what appeared to be red paint in it (Photo #2). The water from storm outlet runs through the swale and eventually drains into Wildcat Creek.

Dumping was observed out of the boundary of the city property all the way to the Wildcat Creek on the north side and on the Sutton Towing property to the north. Auto parts, gasoline tanks, tires and metal slags were present between the property fence and the rail road and on the Sutton Towing property ((Photo #3 and #4). An abandoned car was present on the cliff of the creek bank.

Commented [SL1]: Again, this was on the property to the north – Sutton Towing.

Haynes Corporation facility, a Specialty Metals Manufacturer, is located to the east of the railroad. This facility manufactures nickel and cobalt alloys and has their own landfill.

3.2 Sampling Activities

After the Site reconnaissance, U.S. EPA and START selected sampling locations and conducted sample collection activities. The objective of soil sampling was to determine both surface and subsurface soil contamination.

3.2.1 Subsurface Soil Boring

Subsurface soil sampling was conducted to determine the presence or absence of contaminated soils, depth of waste material, and the need for removal actions. A total of seven soil borings were advanced on the eastern side of the Site property using a Geoprobe® DPT drill operated by OTIE's drilling subcontractor, Ark Engineering Services Inc. Soil boring locations are indicated in Figure 3 and are identified with labels "KB-SBx." Soil borings were advanced up to a maximum depth of 20 feet below ground surface (bgs). Descriptions of soil borings are listed in Table 1.

The soil borings were logged in 4-foot intervals. Typical soil borings consisted of red or green clay with silt material up to 6-8 feet bgs, followed by green moist clay between 8 – 13 feet bgs. Hard

clay was found around 14 feet bgs. Moist soil was found below 8 feet bgs. Copies of the completed soil boring logs are provided in Appendix B.

Table 1
Sampling Summary
Kokomo Dump Site Assessment
Kokomo, Indiana

Soil Boring/ Drum Identification	Location	Sample ID	Laboratory Analyses
KD-SB-1	Location was just east of the "L" shaped fence where slag was found on the ground	KD-SB-1 16´-16.5´	PCBs and Total & TCLP VOCs, SVOCs, and Metals
KD-SB-2	Location was south of KD-SB-1 where surface water run-off pathway towards the swale was observed	KD-SB-2 6´-8´	Total & TCLP Metals
		KD-SB-2 11´-12´	PCBs and Total & TCLP VOCs, SVOCs, and Metals
KD-SB-3	Location was inside the eastern fence	KD-SB-3 10´-12´ KD-SB-3 10´-12´ MS/MSD	Total &TCLP Metals
KD-SB-4	Location was northwest of KD-SB1	Not Sampled	Not Applicable
KD-SB-5	Location was inside the eastern fence north of KD-SB-3	Not Sampled	Not Applicable
KD-SB-6	Location was inside the eastern fence north of KD-SB-5 at the north-east corner of the Site	KD-SB-6 3´-4´ KD-SB-9 3´-4´ (dup)	PCBs and Total & TCLP VOCs, SVOCs, and Metals
KD-SB-7	Location was north of KD-SB1 close to the northern fence	KD-SB-7 4´-6´	Total & TCLP Metals
DRUM-1	Drum with Red paint near the swale	KD-DRUM-1	Total & TCLP Metals
DRUM-2	Drum with Metal slag	KD-DRUM-2	Total & TCLP Metals
Surface Soil near DRUM-1	Near Drum with Red paint near the swale	KD-SS-01	Total & TCLP Metals
Drum with Soil Cuttings	Staged near the Site building	KD-DISP-SOIL-01	PCBs and TCLP VOCs, SVOCs, and Metals
Drum with decon water	Staged near the Site building	KD-IDW-WATER-01	Total VOCs, SVOCs, PCBs, & Metals

Notes:
VOCs - volatile organic compounds PCBs – polychlorinated biphenyls
SVOCs - semi-volatile organic compounds
TCLP - Toxicity Characteristic Leaching Procedure
Sample ID- identification names given for samples
KD-SB-1 16´-16.5´ – Sample collected from soil boring KD-SB1 from 16 – 16.5 feet bgs
Samples were collected on August 19, 2011 under START contract EP-S5-10-10. Analyses were conducted by Spectrum Analytical, Inc. under TDD No: TO-01-11-08-0018

3.2.2 Field Screening Tests

Drum samples, surface soil samples and soil borings were screened in the field using XRF instrument for heavy metals. Surface soil, soil borings and drum samples were collected in Ziploc bags and homogenized before screening with XRF instrument. About 60 samples were screened with the XRF-field screening instrument and the results are presented in Table 2.

Each 4-foot interval of the soil borings was screened with MultiRAE for VOCs and a maximum VOC reading was recorded for each interval (Photo #5). The soil boring KD-SB1, at depth interval 11-12 feet bgs exhibited the highest Volatile organic compounds (VOCs) reading on the MultiRAE at 120 parts per million (ppm).

3.2.3 Analytical Sampling

Samples for laboratory analyses were collected based on XRF and VOC screening results. The soil depth interval from each boring which exhibited the highest reading for VOCs and/or metals was submitted to the laboratory for analysis.

A total of six subsurface soil samples (KD-SB1 16´-16.5´, KD-SB2 11´-12´, KD-SB2 6´-8´, KD-SB3 10´-12´, KD-SB6 3´-4´, KD-SB7 4´-6´) were collected. A duplicate sample was also collected from soil boring KD-SB6 and the duplicate sample was labeled as KD-SB9 3´- 4´. Samples KD-SB1 16´-16.5´, KD-SB2 11´-12´, KD-SB6 3´-4´ and KD-SB9 3´-4´ were submitted for polychlorinated biphenyls (PCBs), total and Toxicity Characteristic Leaching Procedure (TCLP) VOCs, semivolatile volatile organic compounds (SVOCs) and metals analyses. One matrix spike/matrix spike duplicate (MS/MSD) sample was collected from KD-SB-3 10´-12´ as part of the QA/QC protocols. No samples were collected from soil borings KD-SB-4 and KD-SB-5 because high levels were not found for VOCs or metals during field screening.

Two drum samples (KD-DRUM-1 and KD-DRUM-2) and one surface soil sample (KD-SS-01) were collected and submitted for total and TCLP metals analysis (Photo #6). Drum samples were collected near the swale on the southeast side. Drum samples were collected from drums that were partially buried into the ground and in a deteriorated condition with their contents open. Drum contents were scooped up and collected in Ziploc bags for XRF screening before transferring them into the sample jars. The surface soil sample was collected on the banks of the swale near the storm

outlet. The location of the surface soil sample was between DRUM-1 with the red paint and the swale. The water from swale eventually drains into Wildcat Creek.

Two investigation derived waste (IDW) samples, one from the soil cuttings (KD-DISP-SOIL-01) and another from the decon water (KD-IDW-WATER-01), were collected. The solid IDW sample was submitted for PCBs, TCLP VOCs, SVOCs and metals analyses. The liquid IDW sample was submitted for PCBs, total VOCs, SVOCs and metals analyses.

Sample locations, descriptions and laboratory analyses for samples are summarized in Table 1.

START prepared the sample jars with labels, completed the chain of custody and packed all sample bottles on ice. START secured the samples inside a cooler for transportation. Samples were sent to Spectrum Analytical, Inc (PEL). in Tampa, Florida for above-mentioned analyses for standard turnaround time.

Table 2
XRF Screening Data
Kokomo Dump Site Assessment
Kokomo, Indiana

Time	Sample ID	Arsenic		Barium		Cadmium		Chromium		Copper		Lead		Mercury		Selenium		Silver		Zinc	
		(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%
08/19/2011 11:00:34 AM	KD-SB-1 6"-24"	ND	34.0	ND		ND	47.5	874.3	84.5	267.5	15.1	685.8	15.9	ND	17.1	ND	5.8	60.7	16.7	1,357.6	27.7
08/19/2011 11:14:41 AM	KD-SB-1 8'-10'-1	ND	26.7	ND		ND	47.0	500.8	81.7	286.5	15.4	428.0	11.8	ND	17.3	ND	5.1	108.1	16.4	4,526.8	63.9
08/19/2011 11:16:40 AM	KD-SB-1 8'-10'-2	11.8	3.3	ND		ND	42.9	ND	133.2	32.8	8.2	38.6	4.0	ND	12.2	ND	3.3	60.9	15.0	237.9	9.5
08/19/2011 11:20:16 AM	KD-SB-1 10'-12'	8.9	2.6	ND		ND	42.3	ND	134.1	29.7	8.0	13.6	3.2	ND	11.0	ND	3.4	84.0	14.8	73.5	5.7
08/19/2011 11:22:43 AM	KD-SB-1 14'-16'	8.7	2.3	ND		ND	40.1	ND	116.0	ND	21.1	9.1	2.9	ND	10.3	ND	3.3	51.6	14.0	38.1	4.4
08/19/2011 11:25:46 AM	KD-SB-1 16'-18'	8.4	2.5	ND		ND	41.8	ND	125.8	31.7	7.9	11.2	3.1	ND	10.1	ND	3.5	ND	43.6	50.4	5.0
08/19/2011 11:28:38 AM	KD-SB-1 18'-20'	ND	7.0	ND		ND	41.2	ND	121.5	22.7	7.5	12.4	3.1	ND	10.3	ND	3.5	85.4	14.4	42.6	4.7
08/19/2011 11:40:01 AM	KD-DRUM-1	ND	48.2	ND		ND	42.1	185.3	56.4	ND	29.9	1,778.8	27.0	ND	26.3	ND	6.8	ND	44.6	15,235.7	170.3
08/19/2011 11:47:15 AM	KD-SS-01	105.3	32.0	ND		ND	45.5	1,831.6	95.2	223.3	15.3	6,141.9	77.4	36.3	8.9	ND	11.4	ND	47.6	1,389.7	27.3
08/19/2011 12:02:09 PM	KD-DRUM-2	ND	42.2	ND		406.4	34.8	12,697.1	620.0	951.3	66.2	241.8	20.2	94.5	18.0	ND	12.8	ND	101.0	1,516.3	60.0
08/19/2011 12:35:15 PM	KD-SB-1 12'-14'	ND	17.9	ND		ND	52.4	ND	260.9	277.1	17.2	117.2	7.4	ND	15.8	ND	4.4	86.3	18.6	1,341.1	30.2
08/19/2011 01:36:47 PM	KD-SB-2 14'-16'	ND	8.0	ND		ND	40.2	ND	119.9	23.1	7.4	23.8	3.4	ND	10.1	3.8	1.2	68.7	14.0	69.1	5.3
08/19/2011 01:38:42 PM	KD-SB-2 12'-14'	ND	34.4	ND		43.5	14.1	1,246.6	86.3	359.9	15.3	897.1	16.8	ND	17.2	ND	4.9	ND	44.1	3,930.5	52.6
08/19/2011 01:40:45 PM	KD-SB-2 8'-11'	88.0	24.4	ND		ND	60.0	562.1	156.6	1,364.1	42.5	1,937.8	41.0	ND	32.8	ND	10.0	ND	64.9	10,231.0	170.5
08/19/2011 01:42:43 PM	KD-SB-2 4'-6'	45.8	9.1	ND		ND	47.2	280.2	61.5	292.6	15.2	407.8	11.7	ND	15.2	ND	4.9	ND	49.3	992.7	22.6
08/19/2011 01:45:16 PM	KD-SB-2 6'-8'	82.6	24.1	ND		ND	57.5	431.1	131.6	1,869.3	47.7	2,148.1	41.7	ND	27.3	ND	9.6	ND	61.1	5,004.7	87.4
08/19/2011 01:47:32 PM	KD-SB-2 2'-4'	ND	28.1	ND		ND	45.6	222.2	63.7	356.8	16.0	508.3	12.8	ND	14.4	ND	4.9	53.0	15.9	1,051.6	22.7
08/19/2011 01:49:19 PM	KD-SB-2 0'-2'	ND	13.2	ND		ND	42.5	ND	114.0	24.0	7.8	102.2	5.4	ND	10.5	ND	3.4	71.9	15.0	126.8	7.1
08/19/2011 02:11:55 PM	KD-SB-3 2'-4'	30.7	6.6	ND		ND	39.6	ND	119.7	61.1	8.3	283.6	8.2	ND	10.7	ND	3.8	ND	41.9	182.0	7.9
08/19/2011 02:14:16 PM	KD-SB-3 0'-2'	ND	14.6	ND		ND	41.8	ND	141.4	114.0	10.1	138.1	6.1	ND	11.2	ND	3.8	62.2	14.6	266.1	9.8
08/19/2011 02:15:55 PM	KD-SB-3 6'-8'	41.2	10.9	ND		ND	49.9	593.0	107.2	1,262.3	33.2	510.0	14.4	ND	18.3	ND	5.6	ND	53.2	2,168.5	41.0
08/19/2011 02:17:36 PM	KD-SB-3 4'-6'	ND	14.2	ND		ND	45.2	ND	164.1	108.6	11.1	96.8	5.9	ND	13.2	ND	4.0	ND	48.1	382.2	13.1
08/19/2011 02:27:20 PM	KD-SB-3 10'-12'	95.4	20.7	ND		66.1	18.4	1,103.2	142.5	1,486.2	41.1	1,614.9	33.1	ND	25.2	ND	8.4	71.0	19.9	4,451.3	77.8
08/19/2011 02:30:12 PM	KD-SB-3 8'-10'	75.0	12.6	ND		ND	45.9	372.1	69.0	812.1	23.5	878.4	17.7	ND	19.9	ND	5.5	75.2	16.0	5,613.3	75.2
08/19/2011 02:32:21 PM	KD-SB-3 12'-14'	ND	21.9	ND		ND	44.4	ND	190.3	690.3	20.9	320.0	9.7	ND	14.1	ND	4.4	68.5	15.5	853.7	19.6
08/19/2011 02:34:16 PM	KD-SB-3 14'-16'	19.3	3.2	ND		ND	43.9	ND	150.3	ND	24.5	24.5	3.7	ND	11.0	ND	3.6	78.6	15.2	81.2	6.1

Table 2 (continued)
XRF Screening Data
Kokomo Dump Site Assessment
Kokomo, Indiana

Time	Sample ID	Arsenic		Barium		Cadmium		Chromium		Copper		Lead		Mercury		Selenium		Silver		Zinc	
		(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%	(ppm)	%
08/19/2011 03:01:03 PM	KD-SB-4 0'-2'	ND	32.1	ND		ND	44.1	ND	176.6	698.2	21.0	695.4	15.0	ND	15.6	ND	5.6	ND	46.6	971.2	21.3
08/19/2011 03:03:16 PM	KD-SB-4 2'-4'	ND	33.4	ND		ND	49.0	291.7	86.0	4,242.0	69.2	622.7	15.4	ND	17.8	ND	5.6	74.8	17.2	1,214.7	27.9
08/19/2011 03:05:14 PM	KD-SB-4 4'-6'	ND	26.4	ND		ND	46.8	320.4	62.3	245.2	14.2	473.1	12.4	ND	15.2	ND	4.7	78.9	16.3	431.4	14.0
08/19/2011 03:07:16 PM	KD-SB-4 6'-8'	54.6	12.6	ND		ND	57.6	1,343.8	144.9	1,697.0	44.1	545.2	16.8	59.3	9.6	ND	7.1	73.7	20.2	3,228.5	61.0
08/19/2011 03:08:57 PM	KD-SB-4 8'-10'	ND	64.4	ND		ND	53.5	1,501.2	135.8	1,363.6	37.2	1,966.8	36.5	69.6	10.4	ND	9.5	ND	57.0	4,365.2	73.3
08/19/2011 03:11:06 PM	KD-SB-4 10'-12'	16.9	2.8	ND		ND	42.7	ND	134.6	ND	23.4	13.6	3.2	ND	10.7	ND	3.4	63.2	14.9	51.7	5.1
08/19/2011 03:30:16 PM	KD-SB-5 2'-4'	24.7	2.4	ND		ND	31.0	ND	82.8	ND	17.0	18.1	2.5	ND	7.3	ND	2.4	ND	33.4	67.9	4.3
08/19/2011 03:33:01 PM	KD-SB-5 4'-6'	16.3	3.8	ND		ND	43.5	169.1	48.7	79.9	9.7	53.7	4.5	ND	11.3	ND	3.6	ND	46.0	152.9	8.0
08/19/2011 03:35:26 PM	KD-SB-5 6'-8'	20.0	5.9	ND		ND	43.1	ND	163.1	117.6	10.5	198.1	7.4	26.7	5.1	ND	4.3	74.1	15.0	467.4	13.4
08/19/2011 03:37:34 PM	KD-SB-5 8'-10'	ND	8.7	ND		ND	46.6	ND	143.6	ND	25.5	17.9	3.6	ND	10.9	ND	3.9	113.0	16.2	72.8	6.1
08/19/2011 03:39:30 PM	KD-SB-5 10'-12'	ND	9.5	ND		ND	50.8	ND	150.0	29.8	9.8	16.9	4.0	ND	12.6	ND	3.8	ND	53.7	94.3	7.6
08/19/2011 04:00:05 PM	KD-SB-6 2'-4'	ND	12.5	ND		ND	41.9	194.5	51.6	211.5	12.0	87.6	5.1	ND	11.2	ND	3.4	51.1	14.6	234.2	9.4
08/19/2011 04:02:51 PM	KD-SB-6 6'-8'	ND	7.5	ND		ND	40.6	ND	113.5	ND	21.3	18.5	3.2	ND	9.6	ND	3.2	51.5	14.1	46.1	4.7
08/19/2011 04:05:00 PM	KD-SB-6 8'-10'	ND	13.2	ND		ND	49.9	267.4	84.6	316.1	16.6	57.6	5.4	ND	14.7	ND	4.1	113.2	17.3	325.4	12.9
08/19/2011 04:07:09 PM	KD-SB-6 10'-12'	10.9	3.4	ND		ND	55.0	ND	175.4	ND	31.5	ND	12.3	ND	12.7	ND	4.0	ND	58.7	61.8	7.0
08/19/2011 04:28:44 PM	KD-SB-7 2'-4'	31.7	6.9	ND		ND	44.6	ND	154.9	336.8	15.1	257.5	8.7	ND	13.7	ND	4.1	74.9	15.6	433.6	13.4
08/19/2011 04:30:24 PM	KD-SB-7 4'-6'	ND	21.8	ND		ND	49.2	513.3	78.0	757.3	23.9	238.9	9.2	ND	15.3	ND	4.6	94.7	17.2	812.4	20.9
08/19/2011 04:32:10 PM	KD-SB-7 6'-8'	10.1	3.3	ND		ND	42.6	ND	148.2	95.3	9.7	37.5	4.0	ND	10.4	ND	3.3	ND	44.6	152.2	7.8
08/19/2011 04:33:36 PM	KD-SB-7 8'-10'	ND	14.5	ND		ND	44.7	249.9	60.5	595.9	19.3	111.4	6.0	ND	12.1	ND	4.0	84.2	15.6	472.1	14.2
08/19/2011 04:35:15 PM	KD-SB-7 10'-12'	8.8	2.8	ND		ND	45.9	ND	142.5	32.7	8.6	15.6	3.5	ND	12.1	ND	3.9	86.2	15.8	66.0	5.9

Notes:

ppm - parts per million
ND – analyte not detected above the laboratory method detection limit
% - Percentage Error of the XRF instrument


S Dixon Rd
W County Road 00 Ns
Wildcat Creek
Rail Road
WWoodland Ave
Westdale Ct
Shannon Rd
Belmont Ave
AERIAL SOURCE: BING MAPS HYBRID
Disclaimer: This map is intended for visual orientation use only.
In no way is this map to be used for precise locational use.
Legend
Property Boundary
N
0
500
1,000
Feet
Kokomo,
Howard County,
Indiana
United States Environmental Protection Agency
KOKOMO DUMP
SITE ASSESSMENT
KOKOMO, HOWARD COUNTY, INDIANA
TDD No. TO-01-11-08-0018
FIGURE 2
SITE FEATURES MAP
OTIE


Wildcat Creek
S Dixon Rd
S Dixon Rd
S Dixon Rd
Rail Road
KD-SB7
KD-SB6
KD-SB4
KD-SB5
KD-SB1
KD-SB3
KD-SB2
DUMPED TIRES, DRUMS, AUTO PARTS, AND GASOLINE TANKS
KD-DRUM1
KD-SURFACE SOIL1
KD-DRUM2
STORM OUTLET AND SWALE
AERIAL SOURCE: BING MAPS HYBRID
Disclaimer: This map is intended for visual orientation use only. In no way is this map to be used for precise locational use.
Legend
Sample Locations
Property Boundary
N
0
125
250
Feet
Kokomo, Howard County, Indiana
United States Environmental Protection Agency
KOKOMO DUMP
SITE ASSESSMENT
KOKOMO, HOWARD COUNTY, INDIANA
TDD No. TO-01-11-08-0018
FIGURE 3
SOIL BORING LOCATIONS AND SAMPLE LOCATIONS MAP
OTIE

4. ANALYTICAL RESULTS

START reviewed the sample analytical data and supporting quality assurance/quality control (QA/QC) data provided by Spectrum Analytical. The validated analytical data package is included in Appendix C. Based on START's data validation, the data are acceptable for use as qualified.

4.1 Drum and Surface Soil Sample Analytical Results

Total and TCLP metals results for the drum samples and surface soil sample collected on August 19, 2011 are shown in Table 3. Arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver were detected in drum and surface soil samples. Analytical result of surface soil sample KD-SS-01 exceeded EPA's industrial RSLs for lead of 800 mg/Kg.

Sample analytical results were evaluated against the criteria of characteristics of hazardous waste (40 code of federal regulations (CFR), Section 261.24). Surface soil sample KD-SS-01 exceeded the TCLP criteria of 5 mg/L for lead. Drum sample KD-DRUM-1 had a TCLP lead result of 1.18 mg/L, which is below the TCLP criteria of 5 mg/L for lead. The drum material may have to be disposed of as a special waste in a landfill that is permitted to accept special wastes.

4.2 Subsurface Soil Sample Results

All detected analytical results for subsurface soil samples are shown in Table 4. Several metals, VOCs, SVOCs and PCB Aroclors were detected in subsurface soils samples.

Analytical results of six subsurface soil samples (KD-SB-1 16'-16.5', KD-SB-2 11'-12', KD-SB-2 6'-8', KD-SB-3 10'-12', KD-SB-6 3'-4', KD-SB-7 4'-6', and KD-SB-9 3'-4') exceeded EPA RSLs for arsenic in industrial soil of 1.6 mg/Kg. Analytical results of subsurface soil sample KD-SB-2 11´-12´ exceeded EPA RSLs for lead in industrial soil of 800 mg/Kg that was calculated based on a cumulative noncancer risk. Analytical results of two subsurface soil samples, KD-SB-6 3'-4' and its duplicate KD-SB-9 3'-4' exceeded EPA RSLs for PCBs in industrial soil of 740 micrograms per kilogram (µg/Kg).

Sample analytical results were evaluated against the criteria of characteristics of hazardous waste (40 CFR, Section 261.24). Subsurface soil analytical results did not exceed the TCLP limit for any metals, VOCs, and SVOCs.

4.3 Investigation Derived Waste (IDW) Sample Results

All detected analytical results for IDW samples are shown in Table 5. Several VOCs, SVOCs, metals and PCB Aroclors were detected in the water IDW samples. Several TCLP metals and PCB Aroclors were detected in the soil IDW sample. The TCLP metals analytical results did not exceed the TCLP limits.

Table 3
Drum and Surface Soil Sample Analytical Results
Kokomo Dump Site Assessment
Kokomo, Indiana

ANALYTE			KD-DRUM-1		KD-DRUM-2		KD-SS-01	
Metals	**EPA RSL for Industrial Soil* (mg/Kg)**	***TCLP Limit (mg/L)***	**Total (mg/Kg)**	***TCLP (mg/L)***	**Total (mg/Kg)**	***TCLP (mg/L)***	**Total (mg/Kg)**	***TCLP (mg/L)***
Arsenic	**1.6[c]**	***5***	**2.01**	*ND*	**57.9**	*ND*	ND	*ND*
Barium	**190,000**	***100***	**14,700**	***6.6***	**44.2**	***0.401***	**900**	***3.33***
Cadmium	**NL**	***1***	**6.66**	***0.0231 J***	**441**	***0.836***	**0.769**	***0.0126 J***
Chromium	**NL**	***5***	**44.2**	***0.00815 J***	**792**	***0.0168 J***	**3,980**	***0.0282 J***
Copper	**41,000**	***NL***	ND	*ND*	ND	*ND*	ND	*ND*
Lead	**800**	***5***	**2,360**	***1.18***	**108**	*ND*	**16,100**	***8.35***
Mercury	**43**	***0.2***	**0.0922**	***0.0922***	**0.0191 J**	*ND*	**0.115**	*ND*
Selenium	**5,100**	***1***	**4.11**	*ND*	ND	*ND*	ND	*ND*
Silver	**5,100**	***5***	ND	*ND*	**2.19**	***0.00747 J***	**0.294 J**	*ND*
Zinc	**310,000**	***NL***	ND	*ND*	ND	*ND*	ND	*ND*

* Industrial Soil Screening level is calculated based on noncancer hazard index unless otherwise noted with [c] in which case the screening level is calculated based on a 1 in a million cancer risk

Notes:

VOCs - volatile organic compounds
SVOCs - semi-volatile organic compounds
mg/Kg - milligram per kilogram
mg/L - milligram per liter
J – result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
NA- not analyzed
NL- not listed
ND – analyte not detected above the laboratory method detection limit
Samples were collected on August 19, 2011 under START contract EP-S5-10-10.
Analyses were conducted by Spectrum Analytical, Inc (PEL). in Tampa, Florida under TDD No: TO-01-11-05-0012
Bolded results indicate detections above reporting limit
Shaded results exceeded either the EPA RSLs or TCLP limit

Commented [NB2]: The RSL is for industrial soil so I did not want to compare it to the drum results. The arsenic result for Drum-1 should not have been highlighted. If you want to compare the drum results to the RSL for industrial soil, I can update the table and send it to you

Table 4
Subsurface Soil Sample Analytical Results
Kokomo Dump Site Assessment
Kokomo, Indiana

ANALYTE			KD-SB-1 16'-16.5'		KD-SB-2 11'-12'		KD-SB-2 6'-8'		KD-SB-3 10'-12'		KD-SB-6 3'-4'		KD-SB-7 4'-6'		KD-SB-9 3'-4'	
Metals	**EPA RSLfor Industrial Soil* (mg/Kg)**	**TCLP Limit (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**
Arsenic	**1.6**[c]	***5***	**5.66**	*ND*	ND	*ND*	**39.8**	*ND*	**23.9 J**	*ND*	**13.4**	*ND*	**12**	*ND*	**8.24**	*ND*
Barium	**190,000**	***100***	**506**	***3.68***	**356**	***0.593***	**632**	***0.802***	**485**	***0.898***	**58.6**	***0.746***	**97.4**	***0.493***	**47.9**	***0.0162 J***
Cadmium	**NL**	***1***	**0.817**	***0.00886 J***	**60.3**	*ND*	**21.6**	***0.0626***	**23.2 E**	***0.0300 J***	**0.609**	*ND*	**0.361 J**	***0.00756 J***	**0.574 J**	*ND*
Chromium	**NL**	***5***	**14.1**	***0.0110 J***	**4,030**	***0.0574 J***	**150**	***0.0106 J***	**109 J**	***0.0136 J***	**20.6**	***0.0111 J***	**25**	*ND*	**18.6**	*ND*
Lead	**800**	***5***	**54.2**	***0.0877 J***	**828**	***0.0507 J***	**1,500**	***2.84***	**1,380**	***0.138 J***	**28.6**	***0.0712 J***	**38.6**	***0.0485 J***	**30**	*ND*
Mercury	**43**	***0.2***	**0.0264**	*ND*	**0.251**	*ND*	**0.294**	*ND*	**0.706 J**	*ND*	**0.282**	*ND*	**0.0603**	*ND*	**0.221**	*ND*
Selenium	**5,100**	***1***	ND	*ND*	**1.60 J**	*ND*	**1.12 J**	*ND*	**3.85**	*ND*	ND	*ND*	**1.00 J**	*ND*	ND	*ND*
Silver	**5,100**	***5***	ND	***0.00603 J***	**14.5**	***0.00759 J***	**7**	*ND*	**10.5**	*ND*	ND	*ND*	ND	*ND*	ND	***0.00982 J***
SVOCs			**Total**	**TCLP**	**Total**	**TCLP**	**Total**	**TCLP**	**Total**	**TCLP**	**Total**	**TCLP**	**Total**	**TCLP**	**Total**	**TCLP**
Benzo[a]anthracene	2.1[c]	NL	ND	NA	**0.732 J**	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Benzo[g,h,i]perylene	NL	NL	ND	NA	**0.523 J**	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Bis(2-ethylhexyl) phthalate	NL	NL	ND	NA	**4**	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Chrysene	210[c]	NL	ND	NA	**0.757J**	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Fluoranthene	22,000	NL	ND	NA	**1.900 J**	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
2-Methylnaphthalene	4,100	NL	ND	NA	**0.691 J**	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Naphthalene	18[c]	NL	ND	NA	**2.020 J**	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Phenanthrene	NL	NL	**1.190 J**	NA	**2.320 J**	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Pyrene	17,000	NL	ND	NA	**1.620 J**	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
PCBs	**Total (µg/Kg)**		**Total (µg/Kg)**		**Total (µg/Kg)**		**Total (µg/Kg)**		**Total (µg/Kg)**		**Total (µg/Kg)**		**Total (µg/Kg)**		**Total (µg/Kg)**	
Aroclor-1248	740		ND		NA		NA		NA		5,200		NA		3,700	
Aroclor-1254	740		280		NA		NA		NA		1,500		NA		1,000	

Table #4 (continued)
Subsurface Soil Sample Analytical Results
Kokomo Dump Site Assessment
Kokomo, Indiana

ANALYTE			KD-SB-1 16'-16.5'		KD-SB-2 11'-12'		KD-SB-2 6'-8'		KD-SB-3 10'-12'		KD-SB-6 3'-4'		KD-SB-7 4'-6'		KD-SB-9 3'-4'	
VOCs	**EPA RSLfor Industrial Soil* (mg/Kg)**	***TCLP Limit (mg/L)***	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**	**Total (mg/Kg)**	**TCLP (mg/L)**
1,3,5-Trimethylbenzene	10,000	*NL*	**0.0945**	*NL*	**0.902**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
1,4-Dichlorobenzene	25,000	*NL*	**0.0228 J**	*NL*	ND	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
4-Isopropyltoluene	NL	*NL*	ND	*NL*	**0.433**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
Benzene	5.4[c]	*0.5*	ND	*ND*	**0.0271 J**	***0.00250 J***	NA	*NA*	NA	*NA*	ND	*ND*	NA	*NA*	ND	*ND*
Chlorobenzene	1,400	*100*	ND	*ND*	**0.0831**	*ND*	NA	*NA*	NA	*NA*	ND	*ND*	NA	*NA*	ND	*ND*
cis-1,2-Dichloroethene	2,000	*NL*	ND	*NL*	**1**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
Ethylbenzene	27[c]	*NL*	**0.0601 J**	*NL*	**0.172 J**	*NL*	NA	*NA*	NA	*NA*	**0.0066**	*NL*	NA	*NA*	**0.0055**	*NL*
Isopropylbenzene	NL	*NL*	0.0923	*NL*	**0.658**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
Methylene Chloride	53[c]	*NL*	ND	*NL*	ND	*NL*	NA	*NA*	NA	*NA*	**0.018**	*NL*	NA	*NA*	**0.0385**	*NL*
m,p-Xylene	2,500	*NL*	ND	*NL*	**0.235**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
Naphthalene	18[c]	*NL*	**0.187 B**	*NL*	**1.400 B**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
n-Butylbenzene	51,000	*NL*	ND	*NL*	**4**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
n-Propylbenzene	21,000	*NL*	**0.151**	*NL*	**1**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
o-Xylene	3,000	*NL*	**0.0325 J**	*NL*	**0.267**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
sec-Butylbenzene	NL	*NL*	**0.351**	*NL*	**2**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
tert-Butylbenzene	NL	*NL*	ND	*NL*	**0.147**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
Tetrachloroethene	2.6[c]	*0.7*	ND	*ND*	**0.43**	*ND*	NA	*NA*	NA	*NA*	ND	*ND*	NA	*NA*	ND	*ND*
Toluene	45,000	*NL*	ND	*NL*	**0.268**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
trans-1,2-Dichloroethene	690	*NL*	ND	*NL*	**0.358**	*NL*	NA	*NA*	NA	*NA*	ND	*NL*	NA	*NA*	ND	*NL*
Trichloroethene	6.4[c]	*0.5*	ND	*ND*	**0.95**	***0.00360 J***	NA	*NA*	NA	*NA*	ND	*ND*	NA	*NA*	ND	*ND*

* Industrial Soil Screening level is calculated based on noncancer hazard index unless otherwise noted with c in which case the screening level is calculated based on a 1 in a million cancer risk

Notes:

VOCs - volatile organic compounds

SVOCs - semi-volatile organic compounds

mg/Kg - milligram per kilogram

mg/L - milligram per liter

J – result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

NA- not assessed

NL- not listed

ND – analyte not detected above the laboratory method detection limit

Samples were collected on August 19, 2011 under START contract EP-S5-10-10.

Analyses were conducted by TestAmerica Laboratories, Inc. under TDD No: TO-01-11-05-0012

Bolded results indicate detections above reporting limit

Shaded results exceeded either the EPA RSLs or TCLP limit

Table 5
IDW Sample Analytical Results
Kokomo Dump Site Assessment
Kokomo, Indiana

ANALYTE		KD-IDW-WATER-01	KD-DISP-SOIL-01
VOCs	**TCLP (mg/L)**	**Total (µg/L)**	**TCLP (mg/L)**
Acetone	NL	**0.0330 JB**	NA
SVOCs		**Total (µg/L)**	**TCLP (mg/L)**
Phenol	NL	**0.044 J**	NA
Metals		**Total (mg/L)**	**TCLP (mg/L)**
Arsenic	5	**0.0213**	ND
Barium	100	**0.401**	**1.05**
Cadmium	1	**0.00643**	ND
Chromium	5	**0.146**	**0.00970 J**
Lead	5	**0.347**	**0.0556 J**
Mercury	0.2	**0.00083**	ND
PCBs		**Total (mg/L)**	**Total (mg/Kg)**
Aroclor-1248	NL	**0.0012**	**0.21**
Aroclor-1254	NL	**0.000340 J**	**0.0091**

Notes:

VOCs - volatile organic compounds

SVOCs - semi-volatile organic compounds

mg/Kg - milligram per kilogram

mg/L - milligram per liter

J – result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

NA- not analyzed

ND – analyte not detected above the laboratory method detection limit

NL - Not Listed

Samples were collected on August 19, 2011 under START contract EP-S5-10-10.

Analyses were conducted by Spectrum Analytical, Inc (PEL). in Tampa, Florida under TDD No: TO-01-11-05-0012

Bolded results indicate detections above reporting limit

Shaded results exceeded either the EPA TCLP limit

5. POTENTIAL SITE RELATED THREATS

Threats posed by the Site were evaluated in accordance with National Contingency Plan (NCP) criteria for initiating a removal action listed under Title 40 of the CFR, Section 300.415(b) (2). Paragraph (b) (2) of 40 CFR Section 300.415 lists factors to be considered when determining the appropriateness of a potential removal action at a Site. Potential site-related threats to human health and the environment were evaluated based on the criteria listed in 40 CFR, Sections 261.20 through 261.24. Factors that are applicable to the Site are discussed below.

Actual or potential exposure of nearby human populations, animals, or the food chain to hazardous substances or pollutants or contaminants

Lead and arsenic were detected above the EPA RSL for industrial soil in some drum, surface and subsurface soil samples collected by U.S. EPA in August 2011. In addition, one surface soil sample had a TCLP lead concentration of 8.35 mg/L which exceeded the TCLP limit for lead of 5 mg/L. Because this sample with lead concentration above the TCLP criteria and two other drums with high levels of lead those are located near a swale that drains into the Wildcat Creek, there is a high potential for lead contamination to migrate off-site. The Site is accessible from the eastside of the property where it is not fenced. Trespassers can potentially be exposed to the high levels of lead and arsenic contamination present at the Site.

Adults and children exposed to large amounts of lead can experience brain and kidney damage. Lead exposure in young children can cause reduced IQ and attention span, learning disabilities, developmental delays, and a range of other health and behavioral effects. Short-terms effects to lead poisoning include fatigue, headache, irritability, metallic taste in mouth, poor appetite, reproductive problems and sleeplessness Long-term effects to lead poisoning include kidney problems, memory loss, muscle and joint pains, premature loss of teeth, shortened life span, stomach aches and pains, nausea, weak wrists and ankles, weight loss. Extreme cases of lead poisoning can result in convulsions, coma, or death. The United States Department of Health and Human Services (DHHS) has determined that certain forms of lead, like lead acetate and lead phosphate are anticipated carcinogens (cancer-causing substances).

Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood

vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. Fish and shellfish can accumulate arsenic. Prenatal and early childhood exposures to arsenic can increase the risk of lung cancer and respiratory disease in later life. Arsenic exposure has also been associated with lower IQ scores in school-aged children and can affect learning.

The DHHS and the EPA have determined that inorganic arsenic is a known human carcinogen. The International Agency for Research on Cancer (IARC) has determined that inorganic arsenic is carcinogenic to humans.

Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers that may pose a threat of release

Two drum samples collected from deteriorated buried drums near the swale had high levels of arsenic and lead. Analytical results for one surface soil collected between the drums and swale exceeded the TCLP criteria for lead. This result indicates that contamination is being released and migrating towards the swale.

High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate

Analytical results of one drum sample (KD-DRUM-1) and one surface soil sample (KD-SS-01) collected near the swale on-site exceeded the EPA RSLs for lead in industrial soil. The surface soil sample had the highest lead concentration at 16,100 mg/Kg which is more than 20 times the EPA RSL. The soil sample also had a TCLP lead result of 8.35 mg/L which exceeded the EPA TCLP limit of 5 mg/L. The results of the Site assessment show that high levels of lead can potentially migrate off-site through the swale. If no action is taken, the lead migration is expected to continue, potentially further increasing the risk to the downgradient receptor populations.

Weather conditions that may cause substances or pollutants or contaminants to migrate or be released

Rain water and snow melt, as they run-off the Site, can mobilize heavy metals in the drums and surface soil toward the swale and into the nearby Wildcat Creek, which is approximately 0.1-mile from the Site.

The availability of other appropriate federal or state response mechanisms to respond to the release

IDEM requested U.S. EPA Region 5 Emergency Response Branch assistance to help evaluate and mitigate a possible threat posed by the Kokomo Dump Site. This request was made to U.S. EPA since IDEM does not have appropriate state response mechanisms or resources to respond.

6. SUMMARY

On August 19, 2011, U.S. EPA and START conducted Site assessment activities at the Kokomo Dump Site in Kokomo, Indiana. Field screening tests were conducted to analyze several drum, surface soil, subsurface soil samples prior to sampling activities. Drum and soil samples were collected and submitted for PCBs, total and TCLP VOCs, total and TCLP SVOCs, and total and TCLP metals analyses.

Analytical results of one drum sample and one surface soil sample exceeded EPA RSLs for lead that was calculated based on a cumulative noncancer risk. Analytical results of two drum samples exceeded EPA RSLs for arsenic that was calculated based on a cumulative noncancer risk.

Sample analytical results were evaluated against the criteria of characteristics of hazardous waste (40 CFR, Section 261.24). Analytical results of one surface soil sample exceeded the TCLP criteria of 5 mg/L for lead and exhibited hazardous waste characteristic. This sample with lead concentrations above the TCLP criteria and two other drums with high levels of lead are located near a swale that drains into the Wildcat Creek, there is a high potential for lead contamination to migrate off-site. The Site is accessible from the east side of the property, where it is not fenced. Trespassers can potentially be exposed to the high levels of lead and arsenic contamination present at the Site. Thus, conditions exist at the Site that support a removal action be conducted to abate threats to human health and the environment.

APPENDIX A

PHOTOGRAPHIC LOG

(3 Pages)

APPENDIX B

SOIL BORING LOGS

(7 Pages)

APPENDIX C

VALIDATED LABORATORY ANALYTICAL RESULTS

(89 Pages)